

WHAT IS CLAIMED IS:

1. A breath testing device housing, comprising:
 - a base to be gripped by an operator;
 - a display oriented to be aligned with an operator's direct line of view while gripping said base; and
 - a mouthpiece interface for interfacing with a removable mouthpiece, said mouthpiece interface oriented with respect to said base such that when a subject blows into the mouthpiece, said display is not in the direct line of view of the subject.
2. A housing in accordance with Claim 1 further comprising at least one actuator for controlling operation of the breath testing device.
3. A housing in accordance with Claim 2 wherein said at least one actuator comprises a manual sample button located on an edge of said base that is opposite an edge where said display is located, such that when an operator stands with the subject and said display in the operator's direct field of view, the operator may at any time press said manual sample button without compromising the operator's grip on said base.
4. A housing in accordance with Claim 1 wherein said housing comprises a first sidewall and an opposite second sidewall coupled together at a front edge and a back edge, said first and second sidewalls extending radially between a top surface and a bottom surface, said display located along said front edge, said mouthpiece interface located along said top surface.
5. A housing in accordance with Claim 4 wherein said mouthpiece interface is oriented such that when a mouthpiece is coupled thereto, the mouthpiece extends outward from said back edge.
6. A housing in accordance with Claim 5 wherein said mouthpiece interface is further oriented such that when a mouthpiece is coupled thereto, the

mouthpiece extends at least one of obliquely from said top surface and substantially parallel to said top surface.

7. A housing in accordance with Claim 4 further comprising at least one actuator for controlling operation of the breath testing device, said at least one actuator extending along said housing rear edge.

8. A housing in accordance with Claim 4 further comprising at least one actuator for controlling illumination of at least a portion of said housing.

9. A housing in accordance with Claim 1 wherein discard breath is not directed at the operator.

10. A housing in accordance with Claim 1 further comprising at least one of a light source for illuminating at least a portion of said interface, and an opening for light to pass from an interior of said housing to an exterior of said housing for illuminating at least a portion of said interface.

11. A housing in accordance with Claim 1 further comprising a mouthpiece ejector for facilitating removal of a mouthpiece from said housing.

12. A housing in accordance with Claim 1 wherein said housing is symmetrical.

13. A mouthpiece for a breath testing device, said mouthpiece comprising a body comprising a first end, a second end, said first end being open so that a subject can blow air into said mouthpiece, said second end being closed, said mouthpiece further comprising at least one port for channeling air blown into said mouthpiece into the breath testing device.

14. A mouthpiece in accordance with Claim 13 wherein said mouthpiece further comprises a discard breath outlet oriented such that discard breath is not directed at an operator of the breath testing device during testing.

15. A mouthpiece in accordance with Claim 13 wherein said mouthpiece snaps into engagement with the breath testing device.

16. A mouthpiece in accordance with Claim 13 further comprising a stop extending radially outward from said body to facilitate positioning a subject's mouth during breath testing.

17. A mouthpiece for a breath tester, said mouthpiece body comprising a substantially planar surface. 

18. A mouthpiece in accordance with Claim 17 wherein a portion of said mouthpiece has a selected cross-sectional shape, said selected cross-sectional shape being one of: a D-shaped cross-sectional shape and a V-shaped cross-sectional shape.

19. A mouthpiece in accordance with Claim 17 wherein said body further comprises at least one port for channeling air therethrough into the breath testing device.

20. A mouthpiece in accordance with Claim 17 wherein said body further comprises at least a first port for channeling air flow into the breath testing device for sampling, and a second port for channeling air flow to a sensor.

21. A mouthpiece in accordance with Claim 17 wherein said body further comprises at least a first port for channeling air flow into the breath testing device for sampling, and a second port for channeling air flow to at least one of a pressure sensor and a thermistor.

22. A mouthpiece in accordance with Claim 17 wherein said body further comprises a plurality of ports for channeling air flow to a differential pressure measuring sensor.

23. A breath tester housing assembly comprising: 

a housing comprising a base, a display, and a mouthpiece interface, said base to be gripped by an operator during testing, said display oriented with respect to said housing to be in line with an operator's direct line of view while gripping said base; and

a mouthpiece configured to be removably coupled to said mouthpiece interface, said mouthpiece comprising a body comprising at least one substantially planar surface.

24. A housing assembly in accordance with Claim 23 wherein said housing further comprises at least one actuator for controlling operation of the breath tester.

25. A housing assembly in accordance with Claim 24 wherein said at least one actuator comprises a manual sample located on an edge of said housing base that is opposite an edge where said display is located, such that when an operator stands with the subject and said display in the operator's direct field of view, the operator may at any time press said manual sample without compromising the operator's grip on said base.

26. A housing assembly in accordance with Claim 23 wherein said housing comprises a first sidewall and an opposite second sidewall coupled together at a front edge and a back edge, said first and second sidewalls extending radially between a top surface and a bottom surface, said display located along said front edge, said mouthpiece interface located along said top surface.

27. A housing in accordance with Claim 26 wherein said mouthpiece interface is oriented with respect to said housing such that said mouthpiece extends outward from said housing back edge when said mouthpiece is coupled to said housing.

28. A housing assembly in accordance with Claim 26 wherein said mouthpiece interface is further oriented such that when a mouthpiece is coupled

thereto, the mouthpiece extends at least one of obliquely from said top surface and substantially parallel to said top surface.

29. A housing assembly in accordance with Claim 23 wherein said mouthpiece is further oriented with respect to said housing such that discard breath discharged from said housing is not directed at the operator.

30. A housing assembly in accordance with Claim 23 wherein said housing further comprises at least one actuator for controlling operation of the breath tester.

31. A housing assembly in accordance with Claim 23 wherein said housing further comprises at least one actuator for controlling illumination of at least a portion of said housing.

32. A housing assembly in accordance with Claim 23 wherein said mouthpiece interface further comprises at least one of a light source for illuminating at least a portion of said interface, and an opening for light to pass from an interior of said housing to an exterior of said housing for illuminating at least a portion of said interface.

33. A housing assembly in accordance with Claim 23 wherein said housing further comprises a mouthpiece ejector for facilitating removal of said mouthpiece from said housing.

34. A housing assembly in accordance with Claim 23 wherein a portion of said mouthpiece has a selected cross-sectional shape, said selected cross-sectional shape being one of: a D-shaped cross-sectional shape and a V-shaped cross-sectional shape.

35. A housing assembly in accordance with Claim 23 wherein a first end of said mouthpiece body is closed and an opposed second end of said body is open to enable a subject being tested to blow air into said body, said body further

comprising at least one port so that air blown into said body can pass through said port.

36. A breath tester housing assembly comprising:

a housing comprising a base, and a display, said base to be gripped by an operator during testing, said display oriented with respect to said housing to be in line with an operator's direct line of view while gripping said base; and

a mouthpiece configured to be removably coupled to said housing, said mouthpiece comprising at least one substantially planar surface.

37. A housing assembly in accordance with Claim 36 wherein said housing further comprises a mouthpiece interface sized to receive said mouthpiece in sealing contact therein.

38. A housing assembly in accordance with Claim 37 wherein said mouthpiece interface comprises at least one of a light source for illuminating at least a portion of said interface, and an opening for light to pass from an interior of said housing to an exterior of said housing for illuminating at least a portion of said interface.

39. A housing assembly in accordance with Claim 38 wherein said housing further comprises at least one actuator for controlling illumination of said mouthpiece interface.

40. A housing assembly in accordance with Claim 38 wherein said mouthpiece interface is further oriented with respect to said housing such that when a mouthpiece is coupled thereto, the mouthpiece extends obliquely from said housing.

41. A housing assembly in accordance with Claim 38 wherein said mouthpiece is further oriented with respect to said housing such that discard breath discharged from said housing is not directed at the operator.

42. A housing assembly in accordance with Claim 37 wherein said mouthpiece comprises at least one of a tube and a funnel.

43. A housing assembly in accordance with Claim 37 wherein said housing comprises at least one actuator for controlling operation of the breath tester, said at least one actuator located on an edge of said housing base that is opposite an edge where said display is located, such that when an operator stands with the subject and said display in the operator's direct field of view, the operator may at any time press said at least one actuator without compromising the operator's grip on said base.

44. A housing assembly in accordance with Claim 37 wherein at least a portion of said mouthpiece has a cross-sectional shape that is substantially similar to at least portion a cross-sectional shape defined by said mouthpiece interface, such that said mouthpiece interface facilitates positioning said mouthpiece in proper alignment with respect to said housing.

45. A housing assembly in accordance with Claim 37 wherein said mouthpiece has a selected cross-sectional shape, said selected cross-sectional shape being one of: a D-shaped cross-sectional shape and a V-shaped cross-sectional shape.

46. A housing assembly in accordance with Claim 37 wherein a first end of said mouthpiece body is closed and an opposed second end of said body is open to enable a subject being tested to blow air into said body, said first end has a semi-circular cross-sectional profile.

47. A breath testing device mouthpiece, said mouthpiece comprising a first end, a second end, and a body extending therebetween, a portion of said body has a selected cross-sectional shape, said selected cross-sectional shape being one of: a D-shaped cross-sectional shape and a V-shaped cross-sectional shape, said body further comprising a passageway extending through said body from said first end towards said second end, said passageway for channeling air blown into said mouthpiece into the breath testing device.

48. A mouthpiece in accordance with Claim 47 wherein said body further comprises an external surface, an internal surface, and at least one inlet port extending therebetween, said inlet port for channeling air from the passageway into the breath testing device.

49. A mouthpiece in accordance with Claim 47 wherein said body further comprises an external surface, an internal surface, and at least one outlet port extending therebetween, said outlet port for channeling discard breath air from the mouthpiece during testing.

50. A mouthpiece in accordance with Claim 49 wherein said at least one outlet port is oriented with respect to said mouthpiece such that discard breath is not directed at an operator of the breath testing device during testing.

51. A mouthpiece in accordance with Claim 47 wherein at least a portion of said body comprises a substantially planar surface.

52. A mouthpiece in accordance with Claim 51 wherein said body further comprises an external surface, an internal surface, and at least one port extending therebetween, said internal surface defining said passageway, said at least one port extends through said substantially planar surface.

53. A mouthpiece in accordance with Claim 47 wherein one of said first end and said second end is rounded to facilitate engagement with the breath testing device.

54. A mouthpiece for a breath testing device, said mouthpiece comprising a body extending between a first end and a second end, said body comprising a first body portion, a second body portion, and a passageway defined at least partially within said first and second body portions, said first body portion extending from said first end to said second body portion, said second body portion extending from said second end to said first body portion, said passageway substantially concentrically aligned with respect to said body and extending from said first end towards said second end for channeling air blown into said first end into the

breath tester, at least one of said first and second body portions comprises at least one port extending between an external surface of said body and said passageway.

55. A mouthpiece in accordance with Claim 54 wherein said at least one port is defined within said second body portion for channeling air blown into said first end into the breath testing device during testing.

56. A mouthpiece in accordance with Claim 54 wherein said at least one port is defined within said first body portion for channeling discard breath air from said mouthpiece during testing, said at least one port is oriented with respect to said mouthpiece such that discard breath is not directed towards an operator of the breath testing device during testing.

57. A mouthpiece in accordance with Claim 54 wherein said second end is closed, said first end is open to enable a subject being tested to blow air into said mouthpiece.

58. A mouthpiece in accordance with Claim 57 wherein said second end is rounded to facilitate engagement with the breath testing device.

59. A mouthpiece in accordance with Claim 57 wherein one of said first body portion and said second body portion has a selected cross-sectional shape, said selected cross-sectional shape being one of: a D-shaped cross-sectional shape and a V-shaped cross-sectional shape.

60. A mouthpiece in accordance with Claim 58 wherein one of said first body portion and said second body portion has a substantially semi-circular cross-sectional shape.